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UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF PUBLIC ROADS  
DIVISION OF AGRICULTURAL ENGINEERING

S.H. McCrory, Chief

WASHINGTON, D. C., JUNE 21, 1928

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: NEW BOOKS OF TRANSPORTATION REQUESTS:  
: WILL NOT BE ISSUED ON JULY 1. OLD BOOKS :  
: MAY BE USED BY CHANGING THE FISCAL YEAR :  
: "1928", WHEREVER IT APPEARS, TO THE FISCAL:  
: YEAR "1929". IT IS SUGGESTED THAT IN :  
: ORDER TO AVOID CONFUSION, EACH EMPLOYEE :  
: ON OR ABOUT JULY 1 MAKE THIS CHANGE ON ALL:  
: OF HIS REMAINING BLANK REQUESTS. :  
:.....

AS THIS ISSUE OF THE NEWS LETTER COMES OUT, WE ARE IN THE MIDST OF THE ANNUAL CONVENTION OF THE AMERICAN SOCIETY OF AGRICULTURAL ENGINEERS BEING HELD HERE AT THE HAMILTON HOTEL, JUNE 19-22. THOSE ON THE FIELD FORCE PRESENT TO PRESENT PAPERS ARE: DR. H. SCHILDNECHT, F.O. BARTEL, C. E. RAMSER. RATHER EXTENSIVE PREPARATIONS HAVE BEEN MADE FOR THIS MEETING. MANY OF THE MEMBERS ARE BRINGING THEIR WIVES AND FAMILIES. A PROGRAM FOR LADIES HAS BEEN WORKED OUT. IN ADDITION TO THE SCHEDULED SESSIONS, THERE WILL BE TWO SIGHT-SEEING TRIPS, ONE AROUND WASHINGTON AND ONE TO MT. VERNON. THIS MEETING WILL BE REPORTED MORE FULLY NEXT MONTH.

W.W. McLAUGHLIN IS SPENDING SEVERAL DAYS IN WASHINGTON CONFERRING WITH MR. MCCRORY AND OTHER BUREAU OFFICIALS IN REGARD TO THE CONDUCT OF THE IRRIGATION WORK.

O.V.P. STOUT HAS SUBMITTED THE FOLLOWING BRIEF SUMMARY OF THE 1927 ANNUAL REPORT ON "CONSUMPTIVE USE OF WATER IN THE SACRAMENTO-SAN JOAQUIN DELTA, CALIFORNIA".

"COOPERATIVE IRRIGATION INVESTIGATIONS, PRIMARILY TO DETERMINE THE CONSUMPTIVE USE OF WATER IN THE SACRAMENTO-SAN JOAQUIN DELTA, HAVE BEEN CARRIED ON SINCE 1924. SEPARATE UNDERTAKINGS HAVE BEEN MAINTAINED ON PEAT AND SEDIMENTARY LANDS. AT THE CLOSE OF 1927 MAJOR ACTIVITIES ON SEDIMENTARY LANDS WERE SUSPENDED, THE DATA OBTAINED BEING SUFFICIENT TO JUSTIFY THE ANNOUNCEMENT OF A TENTATIVE FIGURE OF 2 ACRE-Feet PER ACRE FOR THE IRRIGATION SEASON, REPRESENTING CONSUMPTIVE USE. IT IS NOT EXPECTED THAT THE OUTCOME OF SOME CONTINUING INCIDENTAL INVESTIGATION WILL CHANGE THE FIGURE MATERIALLY. INVESTIGATIONS ON PEAT LANDS CONTINUE ON THE SAME SCALE AS HERETOFORE, THE CONDITIONS THERE BEING UNIQUE AND OF GREATER COMPLEXITY THAN IN THE SEDIMENTARY AREAS, THUS REQUIRING GREATER RANGE AND VOLUME OF DATA AS A BASIS FOR CONCLUSIONS.





"SOME INTERESTING SCIENTIFIC AND TECHNICAL PROBLEMS HAVE BEEN ENCOUNTERED, INCLUDING THE FOLLOWING: A 60-INCH STEEL SIPHON REQUIRED TWO RATINGS, ONE FOR FULL FLOW AND ONE FOR FLOW UNDER INADEQUATE VACUUM AT THE SUMMIT. THE BEST MEASUREMENT OF RELATIVELY SMALL DISCHARGE IN A LARGE CHANNEL OF NEARLY UNIFORM CROSS SECTION WAS MADE WITH ROD FLOATS. AN UNSUCCESSFUL ATTEMPT WAS MADE TO MEASURE THESE VERY SLOW VELOCITIES BY ATTACHING A CURRENT METER TO THE FRONT END OF A BOAT AND TAKING AS THE VELOCITY THE DIFFERENCE BETWEEN THE VELOCITY OF THE BOAT AND THAT REGISTERED BY THE METER. THE REASON FOR FAILURE IS NOT KNOWN. A QUANTITATIVE STUDY OF SEEPAGE, VERTICAL AS WELL AS HORIZONTAL, HAS INVOLVED DETERMINATION OF THE PRESSURE OF GROUND WATER FROM POINT TO POINT. ONE DIFFICULTY IN THIS, IN ALL EXCEPT THE LIGHTER SOILS, IS THE TENDENCY OF THE MANIPULATION TO PUDDLE THE SOIL AT THE POINT UNDER INVESTIGATION, SO THAT THE WATER PRESSURE IS NOT TRANSMITTED FOR MEASUREMENT."

A.T. MITCHELSON MADE A BRIEF TRIP INTO SOUTHERN IDAHO WHERE HE PARTICIPATED IN AN EXPERIMENT ON THE USE OF COPPER SULPHATE (BLUE VITROL) IN THE MAIN CANAL OF THE WEST CACHE IRRIGATION DISTRICT IN ORDER TO KILL MOSS GROWING ALONG THE SIDES AND BOTTOM OF THE CANAL. IN FORMER TREATMENTS THE CHEMICAL WAS PUT INTO THE CANAL WHEN THE CANAL WAS RUNNING FULL OR NEARLY FULL, BUT IT WAS DETERMINED TO TRY TO EXPERIMENT WHEN THE VELOCITY OF THE WATER COULD BE REDUCED TO A MINIMUM. ACCORDINGLY THE HEAD-GATES OF THE CANAL WERE CLOSED, A FEW CHECK DAMS THROWN UP ACROSS THE CANAL; AND THE VELOCITY OF THE WATER REMAINING IN THE CANAL REDUCED TO A MAXIMUM OF APPROXIMATELY  $3/10$  FOOT PER SECOND. IN A STRETCH OF 1.96 MILES, 2 BARRELS OF ABOUT 450 POUNDS EACH OF COPPER SULPHATE WERE DISTRIBUTED. IT IS HOPED THAT A REPORT OF THE RESULTS CAN BE MADE IN ABOUT TWO WEEKS AFTER THE APPLICATION.

DURING THE MONTH OF MAY, CARL ROHWER, IN ADDITION TO CARRYING ON THE REGULAR EVAPORATION EXPERIMENTS, MADE A SERIES OF EVAPORATION OBSERVATIONS AT IMPERIAL, CALIFORNIA, AT AN ELEVATION OF 68 FEET BELOW SEA LEVEL, TO DETERMINE THE EFFECT OF ALTITUDE ON EVAPORATION. THESE OBSERVATIONS SHOW THE SAME TREND AS THE ALTITUDE EXPERIMENTS PREVIOUSLY MADE, AND INDICATE THAT IF OTHER CONDITIONS REMAIN THE SAME, THE EVAPORATION DECREASES WITH THE ALTITUDE.

THE FOLLOWING REPORTS HAVE BEEN RECEIVED AT THE BERKELEY OFFICE: "THE AGRICULTURAL, ECONOMIC, AND ENGINEERING PHASES OF THE GRANTS PASS IRRIGATION DISTRICT" BY W. L. POWERS, W. W. McLAUGHLIN, AND P. A. EWING.

"IRRIGATION INVESTIGATIONS IN THE SACRAMENTO-SAN JOAQUIN DELTA, 1927", BY O.V.P. STOUT, LLOYD N. BROWN, AND FRANK DAVIS.

B.S. CLAYTON, WHO IS ASSISTING G. R. BOYD IN THE TREE POISONING EXPERIMENTS REPORTS AS FOLLOWS, REGARDING RESULTS THUS FAR SECURED IN MISSISSIPPI:

RESULTS APPEAR TO SHOW THAT TREES POISONED IN DECEMBER, 1927 AND FEBRUARY, 1928, WHEN SAP IS DOWN DO NOT DIE AS READILY AS THOSE POISONED IN THE SPRING AND SUMMER. ORIGINALLY ABOUT 100 TREES WERE POISONED IN APRIL, JUNE, SEPTEMBER, DECEMBER AND FEBRUARY - ABOUT 500 IN ALL. ALL PECAN TREES POISONED, ARE STILL ALIVE. THE MAPLES ALSO APPEAR TO RESIST THE POISON. THE ASH TREES DIE ABOVE THE CUT BUT COMMONLY SHOOTS REAPPEAR AT THE BASE OF STUMP. THE ROCK ELMS IN SOME CASES, WITH BARK COMPLETELY PEELED FROM LOWER TRUNK WILL HAVE ONE LARGE BRANCH COMPLETELY GREEN AND



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REMAINDER DEAD. HACKBERRY TREES ARE THE EASIEST TO KILL. THE METHOD OF BORING INTO TRUNK AND FILLING HOLE WITH POISON IS A FAILURE. MANY OF THE TREES POISONED IN FEBRUARY PUT OUT LEAVES IN THE SPRING, WHICH REACHED FULL SIZE AND THEN WITHERED.

D. G. MILLER, ENROUTE TO ATLANTIC CITY TO ATTEND THE ANNUAL CONVENTION OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, STOPPED IN WASHINGTON A FEW DAYS TO CONFER, RELATIVE TO HIS WORK, WITH MR. McCORRY, AND WITH OTHER OFFICIALS OF THIS BUREAU AND THE BUREAU OF STANDARDS. AT THE ATLANTIC CITY MEETING MR. MILLER WILL PRESENT A PAPER, "RESISTANCE OF PORTLAND CEMENT CONCRETE TO THE ACTION OF SULFATE WATERS AS INFLUENCED BY THE CEMENT."

R.B. GRAY HAS MADE A TRIP THROUGH A PORTION OF TEXAS TO STUDY THE POSSIBILITIES OF DEVELOPING MACHINERY AND FARMING METHODS FOR CONTROLLING THE PINK BOLL WORM. HE STATES THAT IN THE VICINITY OF CORPUS CHRISTI 200 TO 500 ACRE FIELDS OF COTTON ARE NOT UNCOMMON AND EVERYTHING IS FAVORABLE FOR POWER FARMING; THE ROW TRACTOR IS IN GREAT DEMAND; TEN-ROW DUSTERS ARE IN THE MAKING; AND FOUR-ROW PLANTING AND CULTIVATING WILL SOON BE QUITE COMMON. THIS AREA WILL BE A WONDERFUL FIELD FOR THE MECHANICAL COTTON PICKER WHEN IT IS PERFECTED.

IN CONNECTION WITH THE CORN BORER FIELD STUDIES, A PRACTICAL TEST IS BEING MADE IN SOUTHWEST TEXAS OF LOW CORN CUTTING ATTACHMENTS. MACHINERY FOR THESE TESTS WAS SHIPPED FROM TOLEDO, OHIO, MR. GRAY HAVING SPENT SEVERAL DAYS IN THE TERRITORY SUPERVISING THE OPERATION. IT IS HOPED THAT THE TESTING OF THESE DEVICES WILL YIELD INFORMATION THAT WILL BE OF CONSIDERABLE PRACTICAL USE NEXT FALL TO CORN GROWERS IN THE INFESTED AREA.

D.L. YARNELL HAS RETURNED TO IOWA CITY AFTER SPENDING ABOUT A MONTH HERE AND IN NEW YORK LOOKING UP INFORMATION OF USE TO HIM IN CONNECTION WITH HIS EXPERIMENTAL WORK ON THE FLOW OF WATER AROUND BENDS AND BRIDGE PIERS.

THE FOLLOWING MANUSCRIPTS HAVE BEEN SUBMITTED FOR PUBLICATION BY THE DEPARTMENT OF AGRICULTURE SINCE JANUARY 1, 1928:

"WAREHOUSE STORAGE OF POTATOES IN MAINE," BY R. G. HILL, M.C. BETTS AND W. Z. PENTZER.

"MUTUAL IRRIGATION COMPANIES" BY WELLS A. HUTCHINS.

"FINANCIAL SETTLEMENTS OF DEFAULTING IRRIGATION ENTERPRISES," BY WELLS A. HUTCHINS.

"THE FLOW OF WATER IN DREDGED DRAINAGE CHANNELS" (A REVISION OF DEPARTMENT BULLETIN 832) BY C. E. RAMSER.

"A STUDY OF THE OIL BURNER AS APPLIED TO DOMESTIC HEATING", BY A. H. SENNER.

"RESEARCH IN MECHANICAL FARM EQUIPMENT", BY H. B. WALKER.

"MAKING CELLARS DRY", BY G. M. WARREN.

IN ADDITION TO THE ABOVE THE FOLLOWING HAVE BEEN APPROVED FOR PUBLICATION BY STATE AGENCIES.

"THE IMPROVED VENTURI FLUME," BY R. L. PARSHALL.

"EXPERIMENTAL AND MATHEMATICAL ANALYSES OF DRAIN TILE," BY D. G. MILLER AND J. A. WISE.



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